An Algebraic Introduction To Complex Projective Geometry Commutative Algebra Cambridge Studies In Advanced Mathematics

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Geometry of Complex Numbers Springer
This is a relatively fast paced graduate level introduction to complex algebraic geometry, from the basics to the frontier of the subject. It covers sheaf theory, cohomology, some Hodge theory, as well as some of the more algebraic aspects of algebraic geometry. The author frequently refers the reader if the treatment of a certain topic is readily available elsewhere but goes into considerable detail on topics for which his treatment puts a twist or a more transparent viewpoint. His cases of exploration and are chosen very carefully and deliberately. The textbook achieves its purpose of taking new students of complex algebraic geometry through this a deep yet broad introduction to a vast subject, eventually bringing them to the forefront of the topic via a non-intimidating style.

Complex Geometry Springer Science & Business Media
In this introduction to commutative algebra, the author choses a route that leads the reader through the essential ideas, without getting embroiled in technicalities. He takes the reader quickly to the fundamentals of complex projective geometry, requiring only a basic knowledge of linear and multilinear algebra and some elementary group theory. The author divides the book into three parts. In the first, he develops the general theory of noetherian rings and modules. He includes a certain amount of homological algebra, and he emphasizes rings and modules of fractions as preparation for working with sheaves. In the second part, he discusses polynomial rings in several variables with coefficients in the field of complex numbers. After Noether's normalization lemma and Hilbert's Nullstellensatz, the author introduces affine complex schemes and their morphisms; he then proves Zariski's

main theorem and Chevalley's semi-continuity theorem. Finally, the author's detailed study of Weil and Cartier divisors provides a solid background for modern intersection theory. This is an excellent textbook for those who seek an efficient and rapid introduction to the geometric applications of commutative algebra.

Hodge Theory and Complex Algebraic Geometry I: Springer Science & Business Media

Focusing on basics of algebraic theory, this text presents detailed explanations of integral functions, permutations, and groups as well as Lagrange and Galois theory. Many numerical examples with complete solutions. 1930 edition.

Algebraic Geometry I CUP Archive

The 2003 second volume of this account of Kaehlerian geometry and Hodge theory starts with the topology of families of algebraic varieties. Proofs of the Lefschetz theorem on hyperplane sections, the Picard–Lefschetz study of Lefschetz pencils, and Deligne theorems on the degeneration of the Leray spectral sequence and the global invariant cycles follow. The main results of the second part are the generalized Noether–Lefschetz theorems, the generic triviality of the Abel–Jacobi maps, and most importantly Nori's connectivity theorem, which generalizes the above. The last part of the book is devoted to the relationships between Hodge theory and algebraic cycles. The book concludes with the example of cycles on abelian varieties, where some results of Bloch and Beauville, for example, are expounded. The text is complemented by exercises giving useful results in complex algebraic geometry. It will be welcomed by researchers in both algebraic and differential geometry.

Hodge Theory and Complex Algebraic Geometry I: Volume 1 Springer Science & Business Media

This is a modern introduction to Kaehlerian geometry and Hodge structure. Coverage begins with variables, complex manifolds, holomorphic vector bundles, sheaves and cohomology theory (with the latter being treated in a more theoretical way than is usual in geometry). The book culminates with the Hodge decomposition theorem. In between, the author proves the Kaehler identities, which leads to the hard Lefschetz theorem and the Hodge index theorem. The second part of the book investigates the meaning of these results in several directions.

An Algebraic Introduction to Complex Projective Geometry Cambridge University Press

A clear exposition, with exercises, of the basic ideas of algebraic topology. Suitable for a two-semester course at the beginning graduate level, it assumes a knowledge of point set topology and basic algebra. Although categories and functors are introduced early in the text, excessive generality is avoided, and the author explains the geometric or analytic origins of abstract concepts as they are introduced.

An Introduction to Homological Algebra World Scientific Publishing Company

This book is a basic reference in the modern theory of holomorphic foliations, presenting the interplay between various aspects of the theory and utilizing methods from algebraic and complex geometry along with techniques from complex dynamics and several complex variables. The result is a solid introduction to the theory of foliations, covering basic concepts through modern results on the structure of foliations on complex projective spaces.

Introduction to Complex Analysis American Mathematical Soc.

* Learn how complex numbers may be used to solve algebraic equations, as well as their geometric interpretation * Theoretical aspects are augmented with rich exercises and problems at various levels of difficulty * A special feature is a selection of outstanding Olympiad problems solved by employing the methods presented * May serve as an engaging supplemental text for an introductory undergrad course on complex numbers or number theory

Linear Algebra as an Introduction to Abstract Mathematics Cambridge University Press

This book offers a comprehensive treatment of geometric analysis on symmetric spaces, with applications to representation theory. The author's thorough, accurate approach brings the reader up to date on current research in analysis on symmetric spaces and the analytic approach to the representation theory of semisimple Lie groups. The author is a 1988 Steele Prize recipient for his earlier books in this area.

An Introduction to Complex Analysis and Geometry An Algebraic Introduction to Complex Projective Geometry

An Introduction to Complex Analysis in Several Variables

Introduction to Algebraic Curves American Mathematical Soc.

An elementary account of many aspects of classical complex function theory, including Mobius transformations, elliptic functions, Riemann surfaces, Fuchsian groups and modular functions. The book is based on lectures given to advanced undergraduate students and is well suited as a textbook for a second course in complex function theory.

Complex Functions Cambridge University Press

Excellent introductory text focuses on complex numbers, determinants, orthonormal bases, symmetric and hermitian matrices, first order non-linear equations, linear differential equations, Laplace transforms, Bessel functions, more. Includes 48 black-and-white illustrations. Exercises with solutions. Index.

An Algebraic Introduction to Complex Projective Geometry American Mathematical Soc.

Easily accessible Includes recent developments Assumes very little knowledge of differentiable manifolds and functional analysis Particular emphasis on topics related to mirror symmetry (SUSY, Kaehler-Einstein metrics, Tian-Todorov lemma)

Courier Corporation

An introduction to abstract algebraic geometry, with the only prerequisites being results from commutative algebra, which are stated as needed, and some elementary topology. More than 400 exercises distributed throughout the book offer specific examples as well as more specialised topics not treated in the main text, while three appendices present brief accounts of some areas of current research. This book can thus be used as textbook for an introductory course in algebraic geometry following a basic graduate course in algebra. Robin Hartshorne studied algebraic geometry with Oscar Zariski and David Mumford at Harvard, and with J.-P. Serre and A. Grothendieck in Paris. He is the author of "Residues and Duality", "Foundations of Projective Geometry", "Ample Subvarieties of Algebraic Varieties", and numerous research titles.

Introduction to Complex Hyperbolic Spaces Springer Science & Business Media

In this introduction to commutative algebra, the author choses a route that leads the reader through the essential ideas, without getting embroiled in technicalities. He takes the reader quickly to the fundamentals of complex projective geometry, requiring only a basic knowledge of linear and multilinear algebra and some elementary group theory. The author divides the book into three parts. In the first, he develops the general theory of noetherian rings and modules. He includes a certain amount of homological algebra, and he emphasizes rings and modules of fractions as preparation for working with sheaves. In the second part, he discusses polynomial rings in several variables with coefficients in the field of complex numbers. After Noether's normalization lemma and Hilbert's Nullstellensatz, the author introduces affine complex schemes and their morphisms; he then proves Zariski's

main theorem and Chevalley's semi-continuity theorem. Finally, the author's detailed study of Weil and Cartier divisors provides a solid background for modern intersection theory. This is an excellent textbook for those who seek an efficient and rapid introduction to the geometric applications of commutative algebra.

Algebraic Geometry over the Complex Numbers Courier Corporation

This development of the theory of complex algebraic curves was one of the peaks of nineteenth century mathematics. They have many fascinating properties and arise in various areas of mathematics, from number theory to theoretical physics, and are the subject of much research. By using only the basic techniques acquired in most undergraduate courses in mathematics, Dr. Kirwan introduces the theory, observes the algebraic and topological properties of complex algebraic curves, and shows how they are related to complex analysis.

Local Cohomology Cambridge University Press

The first of two volumes offering a modern introduction to Kaehlerian geometry and Hodge structure. The book starts with basic material on complex variables, complex manifolds, holomorphic vector bundles, sheaves and cohomology theory, the latter being treated in a more theoretical way than is usual in geometry. The author then proves the Kaehler identities, which leads to the hard Lefschetz theorem and the Hodge index theorem. The book culminates with the Hodge decomposition theorem. The meanings of these results are investigated in several directions. Completely self-contained, the book is ideal for students, while its content gives an account of Hodge theory and complex algebraic geometry as has been developed by P. Griffiths and his school, by P. Deligne, and by S. Bloch. The text is complemented by exercises which provide useful results in complex algebraic geometry.

Complex Algebraic Surfaces Cambridge University Press

This book provides a rigorous yet elementary introduction to the theory of analytic functions of a single complex variable. While presupposing in its readership a degree of mathematical maturity, it insists on no formal prerequisites beyond a sound knowledge of calculus. Starting from basic definitions, the text slowly and carefully develops the ideas of complex analysis to the point where such landmarks of the subject as Cauchy's theorem, the Riemann mapping theorem, and the theorem of Mittag-Leffler can be treated without sidestepping any issues of rigor. The emphasis throughout is a geometric one, most pronounced in the extensive chapter dealing with conformal mapping, which amounts essentially to a "short course" in that important area of complex function theory. Each chapter concludes with a wide selection of exercises, ranging from straightforward computations to problems of a more conceptual and thought-provoking nature.

Hodge Theory and Complex Algebraic Geometry II: Volume 2 American Mathematical Soc.

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Complex Algebraic Geometry Cambridge University Press

An Algebraic Introduction to Complex Projective GeometryCambridge University Press